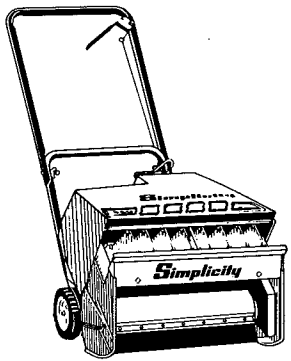
WALK-BEHIND SNOWTHROWERS

350M
350E



OPERATOR'S MANUAL

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Read The Entire Manual Before Operating

This manual covers the following Mfg. Nos.

MODEL 350
(Manual Start)
MFG. NO. 1690901
MFG. NO. 1691405

MODEL 350ES
(Electric Start)
MFG. NO. 1690902
MFG. NO. 1691406

NOTE

The snowthrower is shipped partially disassembled. To assemble, refer to Assembly Instructions shipped with the snowthrower.

Safety Rules

Read these safety rules and follow them closely. Failure to obey these rules can result in loss of control of machine, severe personal injury to yourself or bystanders, or damage to property or equipment affecting safety. The triangle ⚠ in the text signifies important cautions or warnings which must be followed.

GENERAL

All warning, caution, and instructional decals on your snowthrower should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed. If a decal becomes damaged, see your dealer to replace it.

TRAINING

- Read the operating and service instruction manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
- Never allow children to operate the equipment. Never allow adults to operate the equipment without proper instruction.
- Keep the area of operation clear of all persons, particularly small children, and pets.
- Exercise caution to avoid slipping or falling, especially when operating in reverse.

PREPARATION

- Thoroughly inspect the area where the equipment is to be used and remove all doormats, sleds, boards, wires, and other foreign objects.
- Disengage all clutches and shift into neutral before starting the engine (motor).
- Do not operate the equipment without wearing adequate winter outer garments. Wear footwear that will improve footing on slippery surfaces.
- Handle fuel with care; it is highly flammable.
  a. Use an approved fuel container.
  b. Never add fuel to a running engine or hot engine.
  c. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
  d. Replace gasoline cap securely and wipe up spilled fuel.
- Use extension cords and receptacles as specified by the manufacturer for all units with electric drive motors or electric starting motors.
- Adjust the collector housing height to clear gravel or crushed rock surface.
- Never attempt to make any adjustments while the engine (motor) is running (except when specifically recommended by manufacturer).
- Let engine (motor) and machine adjust to outdoor temperatures before starting to clear snow.
- Always wear safety glasses or eye shields during operation or while performing an adjustment or repair to protect eyes from foreign objects that may be thrown from the machine.

OPERATION

- Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
- Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.

- After striking a foreign object, stop the engine (motor), remove the wire from the spark plug, thoroughly inspect the snowthrower for any damage, and repair the damage before restarting and operating the snowthrower.
- If the unit should start to vibrate abnormally, stop the engine (motor) and check immediately for the cause. Vibration is generally a warning of trouble.
- Stop the engine (motor) whenever you leave the operating position, before unclogging the collector/impeller housing or discharge guide, and when making any repairs, adjustments, or inspections.
- When cleaning, repairing, or inspecting, make certain the collector/impeller and all moving parts have stopped. Disconnect the spark plug wire and keep the wire away from the plug to prevent accidental starting.
- Do not run the engine indoors, except when starting the engine and for transporting the snowthrower in or out of the building. Open the outside doors; exhaust fumes are dangerous.
- Do not clear snow across the face of slopes. Exercise extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.
- Never operate the snowthrower without proper guards, plates, or other safety protective devices in place.
- Never operate the snowthrower near glass enclosures, automobiles, window wells, drop-offs, and the like without proper adjustment of the snow discharge angle. Keep children and pets away.
- Do not overload the machine capacity by attempting to clear snow at too fast a rate
- Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when backing.
- Never direct discharge at bystanders or allow anyone in front of unit.
- Disengage power to the collector/impeller when the snowthrower is transported or not in use.
- Use only attachments and accessories approved by the manufacturer of the snowthrower (such as wheel weights, counterweights, cabs, and the like).
- Never operate the snowthrower without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles. Walk; never run.

ELECTRIC START MODELS

- When connecting 120 volt AC "Power Cord," always connect cord to receptacle on dash first, and then plug the other end into power outlet.

MAINTENANCE & STORAGE

- Check shear bolts, and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.
- Never store the machine with fuel in the fuel tank inside a building where ignition sources are present such as hot water and space heaters, clothes dryers, and the like. Allow the engine to cool before storing in any enclosure.
- Always refer to operator's guide instructions for important details if the snowthrower is to be stored for an extended period.
- Maintain or replace safety and instruction labels, as necessary.
- Run the machine a few minutes after throwing snow to prevent freeze-up of the collector/impeller.

Pre-Start Preparation

FUEL SELECTION

A fuel mix label is provided with the snowthrower. Afix this label to the container you will use to store fuel.

1. Use 2-cycle oil available from your dealer. Do not use multi-purpose viscosity oils; they may cause plug fouling.
2. Use regular grade leaded gasoline. Unleaded regular grade gasoline is an acceptable substitute.
3. Gasoline companies blend fuel for seasonal usage. Purchase fresh winter gasoline which is blended for cold weather starting and operation. Do not use gasoline left from summer lawn mower operation.

⚠ WARNING

Gasoline is highly flammable and must be handled and stored with care. Never mix gasoline or fill tank indoors, while smoking, or near an open flame or spark. Never fill the fuel tank when the engine is running or hot from recent operations.

Wipe up any fuel spills. Store gasoline container (cap secure) in a cool, well ventilated place away from flame or spark. Allow for fuel expansion in container and in fuel tank. Use care with oil too. At high temperatures or near an open flame oil is also flammable.

FUEL MIX CHART
Mixture 32:1 (3% mixture)

U.S.		IMPERIAL		S.I. (METRIC)	
Gas	Oil To Be Added	Gas	Oil To Be Added	Petrol	Oil To Be Added
1 Gal.	4 oz.	1 Gal	4.5 oz.	4 Liters	.125 L
2 Gal.	8 oz.	2 Gal.	9 oz.	8 Liters	.250 L
5 Gal.	20 oz.	5 Gal.	22 oz.	20 Liters	.625 L

FUEL MIXING

1. Store oil at temperatures above 50 degrees F (10° celsius) if possible so it will mix more readily with gasoline. Once mixed, oil and gasoline will not separate.
2. Use a clean, approved container to premix and store fuel. Do not mix oil and gasoline in snowthrower fuel tank.

NOTE

It is best to mix oil with only a portion of the gasoline first. For a one gallon example, put 4 ounces (.125 L) of oil and one quart (.94 L) of gasoline in a one gallon container. Secure cap and shake container vigorously. Keep container away from face and eyes while shaking. After shaking add the remaining 3 quarts (2.8 L) of gasoline.

3. Mix gasoline and oil for a 32:1 ratio using the amounts specified in the fuel mix chart. Measure oil carefully.

FILLING THE FUEL TANK

Use a funnel to avoid spills. Leave 1/4 or 1/2 inch (6.4 to 12.7 mm) at the top for expansion. Reinstall fuel cap.

Operation

CONTROLS

The controls are shown in figure 1. The control identification chart on this page explains the function of each control.

This manual covers both manual and electric start models, so some photos may differ slightly from your snowthrower.

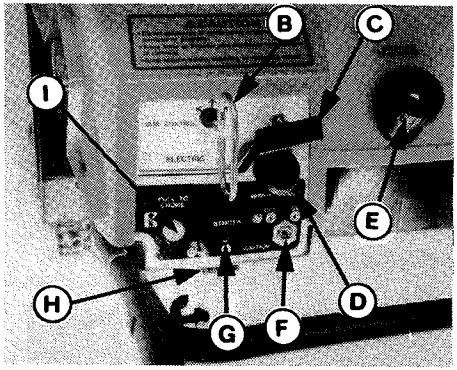
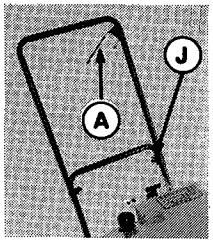


Figure 1.



ITEM	NAME	FUNCTION
A	Impeller Control Lever	Engages impeller when lifted; disengages impeller when released.
B	Vane Control Handle	Directs snow discharge left, right, or straight ahead.
C	Rewind Starter Handle	Pull to start engine.
D	Primer Bulb	Primes carburetor for cold engine starts.
E	Fuel Cap	Remove to add fuel.
F	Ignition Switch	Allows engine starting in ON position stops engine in OFF position. Operates with key.
G	Starter Button	Activates electric starter when pressed (electric start models).
H	Electric Start Plug	Plug for power cord.
I	Choke Knob	Aids cold engine starts when pulled to half or full choke positions.
J	Wing Nut	Loosen wing nut on both sides to fold handle forward for storage.

Control Identification Chart

STARTING THE ENGINE

WARNING

Do not start or run engine in an enclosed area. Exhaust fumes are deadly.

1. If engine is cold, pull choke out fully. If engine is warm, do not use choke.
2. Prime the carburetor by pressing primer bulb fully, covering the vent hole with finger. Allow bulb to return to original position before pressing again.

NOTE

Press primer bulb four times for new units or if storage area was 15° F (-9.4° C) or colder. Press bulb twice if storage area was above 15° F.

3. Put key in ignition switch and turn it to ON.
4. MANUAL START MODELS
   a. Pull the rewind starter handle outward with a smooth, rapid, full-arm stroke. Do not allow starter rope to snap back. If engine fires but does not start after several pulls, press choke knob in and try again.
   b. When the engine starts, push choke in halfway. When engine warms up and runs smoothly, push choke in fully.
5. ELECTRIC START MODELS
   a. Plug the extension cord into snowthrower plug FIRST then to outlet (household current). Press the starter button. If engine fires but does not start after ten seconds, press choke knob in and try again.

CAUTION

Electric start motor can be overheated. Do not run electric starter more than 30 seconds without cooling for three minutes.

   b. When the engine starts, push choke in halfway. When engine warms up and runs smoothly, push choke in fully.

STOPPING

1. Release the impeller control to stop impeller.
2. Turn ignition switch to OFF to stop engine.

SNOW REMOVAL SUGGESTIONS

WARNING

For your personal safety, stop the engine before checking or clearing impeller or discharge vanes.

Plan the snowthrower pattern before beginning. Wind direction is an important factor to consider. Plan the pattern so that you can avoid throwing snow on previously cleared areas and on yourself as you're operating.

The rotation of the impeller paddles provides a certain amount of "walking action". To use this walking action, lift up on the handles so the paddles make contact with the ground then move forward into the snow. To start throwing snow, engage the impeller control lever.

In deep or wet snow, let the snowthrower work at its own pace. If engine r.p.m. drops in deep snow, proceed slower. If the snow stops flowing freely, stop or back up to let the snowthrower clear itself.

AFTER EACH USE

1. Turn key to OFF and remove it.
2. Remove snow and ice to prevent controls or moving parts from freezing. Remove any snow from the directional vanes and work the vane control handle a few times.
3. Store the snowthrower away from heat, open flames, or spark.
4. The snowthrower can be hung on a wall with a suitable hook. Make sure gasoline does not leak from the tank. To store the snowthrower under a bench, loosen the wing nuts on the handle and fold the upper handle back and down.

OFF-SEASON STORAGE

WARNING

Drain fuel tank outdoors away from flame or spark.

1. Drain the fuel tank by removing the tank cap and tipping snowthrower upside down. Use a suitable container.
2. Reinstall the fuel tank cap and wipe up any spills.
3. Start the engine and run the carburetor dry.

NOTE

If gasohol is used, complete proceeding step "3" then add a small amount, one pint or less, of regular gasoline properly mixed with lubricating oil and repeat step "3".

4. Clean the snowthrower. Inspect for loose hardware or damage that should be repaired before next use.
5. Pull the rewind starter rope until resistance is felt due to compression, then stop. Return starter rope slowly. This will position the piston over the cylinder ports to prevent corrosion.
6. Store snowthrower in a clean, dry place. Do not store in an attic, unventilated room, or shed where temperatures can exceed 110° F (43° C).

Service

TROUBLESHOOTING

WARNING

To avoid serious injury, stop engine and allow to cool before servicing.

Troubleshooting procedures are provided in the following chart. First, locate the problem that you have encountered. Check the possible cause in the order listed.

PROBLEM	CAUSE/REMEDY
1. Engine fails to start.	**A.** Key off. Turn key to ON (see Operation).
	B. Out of or low on fuel (engine can be out even with some fuel in tank). Fill tank (see Pre-Start Preparation).
	C. Engine flooded. Move choke to OFF and try again. (See Operation.) If engine still doesn't start, repeat choking and priming procedure and try again (see Operation).
	D. Snow or ice build up on choke plate. Clear out carburetor intake area.
	E. Pinched fuel line. Remove any pinches in fuel line from tank to carburetor. Make sure the line is secured firmly with two clamps.
	F. Water in fuel or fuel is stale. Drain tank (see Off Season Storage). Refill tank (see Pre-Start Preparation).
	G. Ice in fuel line. Remove fuel line and clean out ice.
	H. Fouled spark plug. Clean or replace spark plug (see Spark Plug Service).
2. Engine hard to start or runs poorly.	**A.** Fuel Mixture too rich. Push in choke knob (see Operation).
	B. Fuel mixture incorrect or unmixed. Shake fuel supply can or mix new fuel (see Pre-Start Preparation).
	C. Clogged fuel filter or carburetor. See your dealer.

PROBLEM		CAUSE/REMEDY
2. Engine hard to start or runs poorly. (Cont'd)	**C.**	Spark plug fouled or poorly gapped. Clean or regap plug (see Spark Plug Service).
	D.	Snow or ice buildup on choke plate. Clear out carburetor intake area.
	E.	Gas cap vent plugged with ice or snow. Clear vent.
3. Impeller does not rotate or does not throw snow far enough.	**A.**	Impeller control not engaged. Engage impeller control (see Operation).
	B.	Obstruction, such as ice, blocking impeller. Stop engine. Remove obstruction.
	C.	Vanes blocked. Stop engine. Clean out ice and snow.
	D.	Overloading snowthrower. Proceed slower (see Snow Removal Suggestions).
	E.	Clutch spring adjustment incorrect (see Clutch Spring Adjustment).
	F.	Idler arm sticking. Lubricate (see Idler Arm Lubrication).
	G.	Drive belt slipping, broken, or blocked. Check belt area for obstructions. Replace belt if necessary (see Belt Replacement).
4. Poor cleaning of ground surface.		Hard snow or too much pressure on handle. Lift handle slightly so paddles contact surface fully.
5. Impeller does not stop rotating when control handle is released.	**A.**	Clutch spring or belt guides out of adjustment (see Clutch Spring Adjustments or Belt Guide Adjustment).
	B.	Idler arm sticking (see Idler Arm Lubrication).

BELT GUARD REMOVAL

Remove the six screws shown in figure 2 and remove the guard. When removing, note the screw lengths and which screws have washers. Reinstall guard with screws and washers in original position. Tighten screws securely.

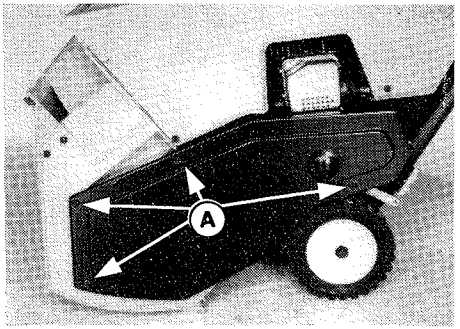


Figure 2.

A. Belt Guard Screws

CHOKE KNOB LUBRICATION

If the choke knob is hard to operate, lubricate the shaft as follows. Pull the choke knob out. Remove any dirt or ice from the shaft. Apply oil to the shaft and work the choke knob a few times.

IDLER ARM LUBRICATION

If the idler arm does not pivot freely when the impeller control lever is engaged and disengaged, lubricate as follows.

1. Remove the belt guard (see Belt Guard Removal).
2. Put a drop or two of oil on each side of the idler arm at the pivot stud (item B, figure 3). Keep oil off belt and pulley.

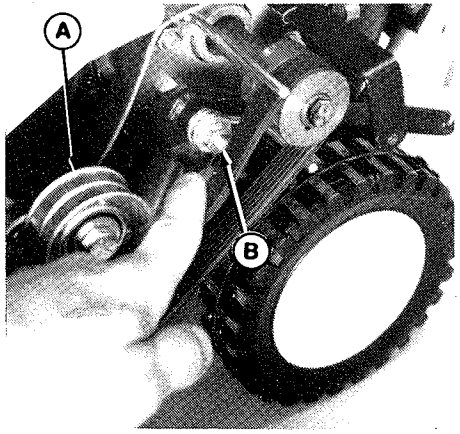


Figure 3.

A. Idler Pulley

B. Pivot Stud

3. Engage and disengage the impeller control several times to work oil under the idler arm.
4. Wipe up any excess oil.

BELT REPLACEMENT

1. Remove the belt guard (see Belt Guard Removal).
2. Remove the fixed belt guide (item A, figure 4) by pulling outward, with pliers if necessary.
3. Remove the belt from under the idler pulley (item B) to provide slack.
4. Slip belt off engine pulley (item C).
5. Remove belt from impeller pulley (item E).
6. Reinstall belt in reverse order of removal.
7. Install the fixed belt guide (item A) securely. Some belt guides have a groove which should be positioned up (opposite of belt side).
8. Check Belt Guide Adjustment and Clutch Spring Adjustment.

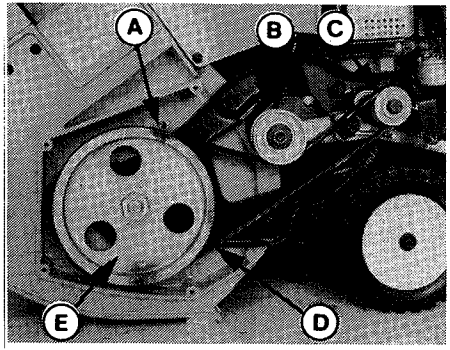


Figure 4.

A. Fixed Belt Guide
B. Idler Pulley
C. Engine Pulley
D. Belt
E. Impeller Pulley

BELT GUIDE ADJUSTMENT

1. Remove belt guard (see Belt Guard Removal).
2. With the impeller control lever engaged, the gap between each belt guide and the belt should be 1/16 inch (.06" or 1.6 mm). See figure 5.
3. To adjust a belt guide, loosen the locknut securing it, move the guide, then tighten securely. Recheck the measurement.

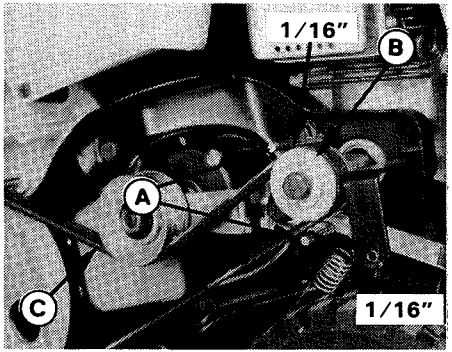


Figure 5.

A. Belt Guides
B. Engine Pulley
C. Belt

CLUTCH SPRING ADJUSTMENT

The tension of the belt is determined by the clutch spring adjustments. Before adjusting, make sure the spring clip (item D, figure 6) is positioned for free operation of cable.

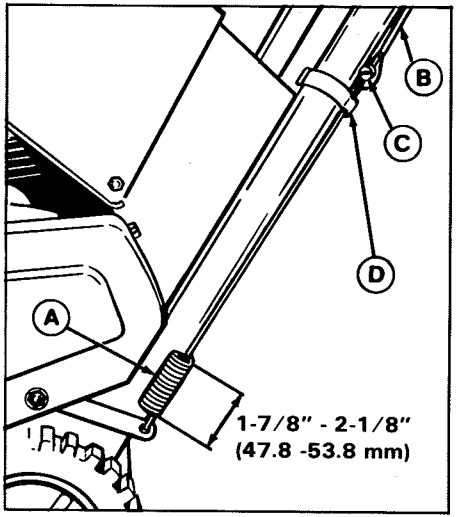


Figure 6.

A. Clutch Spring
B. Clutch Cable
C. Screw (in wire clamp)
D. Spring Clip

1. With the control lever engaged, measure the spring coil as in figure 6. If spring coil measures 1-7/8 to 2-1/8 inch (47.8 to 53.8 mm) it is properly adjusted. If not, proceed as follows.

2. Release the control lever. Loosen the screw (item C, figure 6) in the clamp. Lengthen or shorten the spring and retighten the screw.
3. Recheck the measurement.

UPPER SHROUD REMOVAL

1. Remove the three screws from right-hand side of upper shroud (figure 7).
2. Remove the two screws from left-hand side (figure 8). Notice that the front screw (B) holds a spacer.
3. Remove the fuel tank cap and remove the upper shroud. On early models, two screws must be removed from front (figure 9). Reinstall fuel tank cap.
4. To reinstall the upper shroud, first remove the fuel tank cap. Then, insert the front into the seam and position down over the dash. (On early models, reinstall front screws.) Reinstall screws shown in figures 7 and 8.

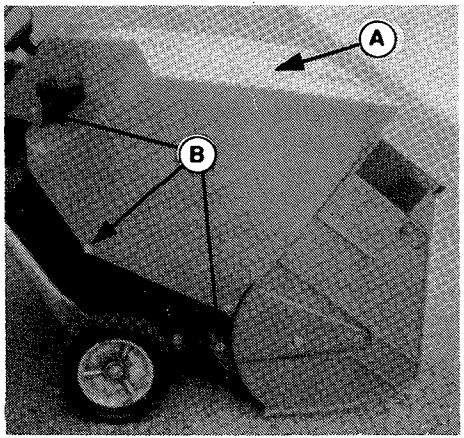


Figure 7

A. Upper Shroud
B. Screws

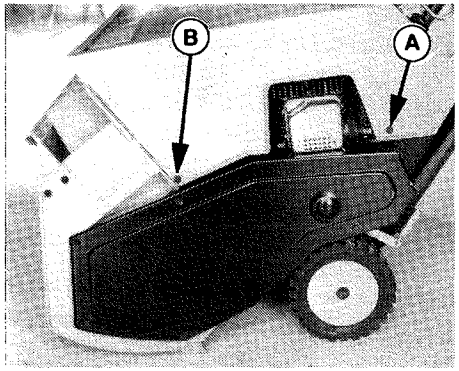


Figure 8

A. Screw
B. Screw (with Spacer)

SPARK PLUG SERVICE

1. Remove upper shroud (see Upper Shroud Removal).
2. Clean area around spark plug to prevent dirt from entering engine.
3. Remove plug wire. Remove plug with a 13/16 inch spark plug socket. Dry the plug with a clean rag.
4. Replace the plug if cracked, burnt, or fouled. Do not sandblast the plug, as grit in cylinder will cause wear. To replace, use Champion RCJ-8Y or equivalent.
5. Check plug setting with feeler gauge and regap electrodes to 0.035 inch (0.89 mm).

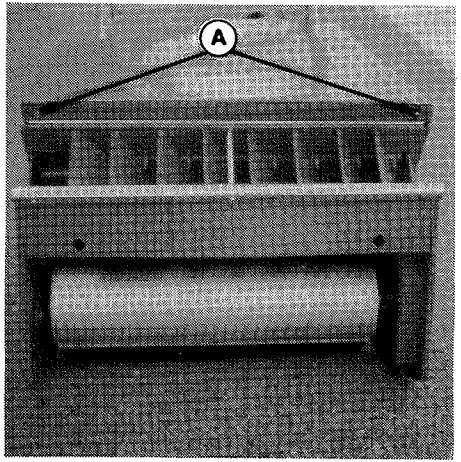


Figure 9

A. Screws (Early Models)

6. Reinstall plug and torque to 15 ft. lbs. (20.3 N.m).
7. Connect the spark plug wire to the spark plug. On electric start models, make sure the starter wire which goes to the starter motor is in original position. The starter wire should be on right side of spark plug and under the spark plug wire. The starter wire should be clipped to the top of the cylinder shroud so that it does not touch cylinder fins or interfere with choke linkage.

Specifications

ENGINE

Make: Tecumseh
Model & Type: See identification plate on engine.
Horsepower: 3 (2.2 kW)
Cycles: 2
Cylinder: 1
Bore: 2.09 In. (53 mm)
Stroke: 1.75 In. (44.4 mm)
Displacement: 6 Cu. In. (98.3 cm^3)
Ignition: Flywheel Magneto s/Key Switch
Governor: Mechanical Air Vane
Choke: Manual, On Control Panel
Primer: Manual, On Control Panel
Starter: Manual, Rewind Starter (all models) Optional 110 V. AC Electric Start Models
Fuel Tank: 2 Quart (1.90 L)
Fuel Mixture: 32:1
Muffler: Steel Canister Type

FRAME

Construction: Heavy Gauge Steel Alloy with Integral Steel Muffler
Wheels: 1-1/2 x 6 In. (38 x 152 mm), Staggered Bar thread

IMPELLER HOUSING

Construction: Injection Molded Polymer
Effective Width: 20.75 In. (527 mm)
Opening Height: 9 In. (228.6 mm)
Discharge: 3 Positions-Right, Left, Forward
Scraper Bar: Extruded

IMPELLER

Construction: Aluminum w/2 Replaceable Rubber Paddles
Diameter: 9" (228.6 mm)
Bearings: Self-Aligning Bronze Bushing - R.H. with Sealed Ball Bearing - L.H.

IMPELLER DRIVE

Type: Cushioning Belt Drive with Idler

HANDLES

Construction: 1 In. (25.4 mm) Steel. Foldable for Storage and Transport

CONTROLS

Throttle: Factory Adjusted RPM
Impeller Drive: Touch-O-Matic Impeller Control On Handle
Directional Vanes: Tee Handle on Control Panel

DIMENSIONS:

Length: 39 In. (990 mm)
Width: 20-3/4 In. (527 mm)
Height: 35 In. (889 mm) To Top of Handle
Weight: Manual Start - 48 lbs. (21.7 kg)
Electric Start - 50.5 lbs. (22.9 kg)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Common Replacement Parts

Listed below are part numbers for the more common replacement parts. Use the order form at the back of the manual to order a complete, illustrated parts manual. Only genuine *Simplicity* replacement parts will assure optimum performance and safety. Do not attempt repairs or maintenance unless proper procedures and safety precautions are followed. For assistance in any area, see your dealer.

Simplicity 2-Cycle Engine Oil
case of 12 - Part #1685517
See your dealer for individual can.

Do-It-Yourself Manual.
Step-by-step instructions for maintenance, troubleshooting and repair. - Part #1673943

QTY. PER UNIT	DESCRIPTION	PART NUMBER
1	Keys (2 keys w/ring)	122203
2	Acorn Nut - for folding handle	933707
2	Wing Nut - For folding handle	1664794
2	Bolt - For Folding Handle	1665221
1	Scraper - Bottom	1677088
1	Drive Belt	1663885

QTY. PER UNIT	DESCRIPTION	PART NUMBER
8	Vanes, Directional	1664773
2	Paddles	1677173
—	Engine Oil	See Above

Record your ID number for future reference.

Snowthrower ID _____
(Located at rear of unit below control panel.)

Engine ID _____ Type _____
(Located on metal tag near bottom of engine.)

PARTS MANUAL AVAILABLE FOR MODEL 350

Simplicity Parts Manuals are fully illustrated. All of the assemblies are shown in exploded views which show the relationship of the parts and how they go together. Important assembly notes and special torque values are included in the illustrations. For standard hardware, a torque specifications chart is included.

To order, enclosed the form with a check or money order made out to SIMPLICITY. Address the envelope to:

Simplicity Manufacturing, Inc.
Attn: Cashier
500 N. Spring Street
P.O. Box 210
Port Washington, WI 53074

SERVICE MANUAL FOR MODEL 350

A Do-It-Yourself service manual is available from your dealer. Order part number 1673943. This manual contains fully illustrated step-by-step instructions for complete maintenance, troubleshooting and repair.

☐ I would like a parts manual (TP-1086) for my snowthrower. I am enclosing a check or money order for $5.00.

(Print clearly, this will be your mailing label.)

NAME _____

STREET OR RFD _____

CITY _____ **STATE** _____ **ZIP** _____

SIMPLICITY MANUFACTURING, INC.
500 N. Spring St., P.O. Box 997
Port Washington, WI USA 53074-0997

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